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A Taste for Sweetness: Exploring Sugar-Sweetened Beverages Preferences Among College Students

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ABSTRACT

The consumption of sugar-sweetened beverages (SSB) is increasingly common among university students, raising concerns about long-term metabolic risks. This study aimed to describe SSB consumption patterns among university students in Malang City. A descriptive cross-sectional survey was conducted in July–August 2024 using an online questionnaire distributed through voluntary sampling. A total of 382 students participated. Data collected included demographics and SSB consumption habits; body weight and height were self-reported with instructions to refer to recent measurements. Results showed that 73.8% of students consumed SSB, most often during the day, with packaged tea being the most preferred type. Taste (45.3%) and affordability (38.7%) were the main purchase reasons, and minimarkets were the most common place of purchase. Overall, SSB intake among students was high, highlighting the need for educational interventions to promote healthier beverage choices.

INTRODUCTION

Globally, the consumption of sugar-sweetened beverages (SSB) has shown a notable upward trend over the past decades. Between 1990 and 2018, SSB intake increased by 0.37 percent, with the most significant increase observed in Sub-Saharan Africa (Lara-Castor et al., 2023). Although data from several regions, particularly the United States, indicate a decline in heavy SSB consumption among both children and adults between 2003–2004 and 2015–2016, overall intake remains high across most age groups and racial or ethnic categories (Dai et al., 2021; Vercammen et al., 2020). These findings suggest that, despite some reductions, disparities persist, and SSB remain prevalent in dietary patterns worldwide, particularly among younger populations who are more exposed to modern food and beverage marketing trends.

In Indonesia, the consumption of sugar-sweetened beverages (SSB) and added sugar remains alarmingly high, contributing significantly to daily sugar intake. Indonesia ranks third in Southeast Asia with an average SSB consumption of 20.23 liters per person per year (Asrofi, 2020). Data from the Central Bureau of Statistics (BPS) in 2021 revealed that the average per capita sugar intake reached 1,123 grams per week, equivalent to about 160 grams per day or three times higher than the national recommendation by the Ministry of Health and six times the daily limit suggested by the World Health Organization (WHO). This excessive intake is also reflected in the rapid growth of packaged sugary drink consumption, which has increased fifteen-fold in the last two decades, from 51 million liters in 1996 to 780 million liters in 2014. Further, the 2018 Basic Health Research (Riskesdas) reported that 61.27% of Indonesians aged three years and

above consume sweetened beverages more than once a day, underscoring the critical role of sugary drinks in shaping national dietary patterns (Purwowidhu, 2024; Saptati, 2024).

Strong scientific evidence consistently demonstrates that the consumption of sugar-sweetened beverages (SSB) is associated with a wide range of adverse health outcomes, including obesity, type 2 diabetes, and cardiovascular disease (Lara-Castor et al., 2025). Both children and adults who consume SSB are at a significantly higher risk of obesity, with studies showing that an additional 250 mL per day increases the risk of obesity in adults by 12% (Malik & Hu, 2022; Qin et al., 2020). Numerous meta-analyses and cohort studies have also confirmed a strong association between SSB intake and type 2 diabetes, with each additional serving per day elevating the risk by 19-27% (Neelakantan et al., 2022; Qin et al., 2020). Similarly, SSB consumption has been linked to an increased risk of cardiovascular disease, including coronary heart disease and stroke, with each extra daily serving raising the risk by 8-15% (Meng et al., 2021; Qin et al., 2020). Beyond these major conditions, regular SSB intake has also been implicated in the development of hypertension, metabolic syndrome, kidney disease, asthma, and even premature mortality, underscoring its profound impact on public health (Li et al., 2023; Qin et al., 2020).

University students represent a population with dynamic lifestyles that often make them highly susceptible to unhealthy dietary behaviors, including the frequent consumption of sugar-sweetened beverages (SSB). Their daily routines, characterized by busy schedules and social activities, increase their reliance on practical and ready-to-consume food and drinks. Moreover, students are easily exposed to and influenced by food and beverage advertising, particularly through social media platforms, where peer pressure, influencers, and targeted marketing strategies play significant roles in shaping consumption choices (Gascoyne et al., 2021; Tsochantaridou et al., 2023). Evidence shows that a large proportion of students acknowledge the impact of advertisements on their food choices, with those with poor nutritional status more likely to consume SSB than healthier options such as fruits and vegetables. These factors position university students as a vulnerable group within today's obesogenic environment (Kalog et al., 2022).

A combination of price, accessibility, and emerging social trends strongly influences preferences for consuming sugar-sweetened beverages (SSB). Relatively low prices and abundant availability in the surrounding environment make SSB easier to choose than healthier alternatives, especially in communities with limited access to nutritious foods and beverages. Additionally, social factors such as lifestyle trends, exposure to advertising, and the appeal of product packaging and design further reinforce consumers' perceptions of the sweetness, value, and prestige of these beverages. Thus, SSB consumption is not only driven by physiological needs but also by economic and social constructs that shape individual and group preferences (Arboleda & Arce-Lopera, 2020; Cartwright et al., 2023).

Despite growing evidence on the health risks associated with sugar-sweetened beverage (SSB) intake, there is limited research in Indonesia that examines consumption patterns among young adults, particularly university students. Malang City, known as one of the largest university towns in the country, offers a unique setting where diverse student populations are highly exposed to SSB due to easy accessibility, affordability, and prevailing lifestyle trends. Understanding how and why students consume these beverages is crucial for informing targeted health promotion efforts and preventive strategies. Therefore, this study aims to describe the consumption patterns of sugar-sweetened beverages among university students in Malang City.

METHOD

This study employed a descriptive cross-sectional design. The research was conducted in Malang City during July and August 2024. The study population comprised active undergraduate students residing in Malang City, and a sample of 382 students was recruited through voluntary sampling, based on predetermined criteria. Based on Cochran's formula for large populations, a sample of around 384 participants is typically recommended. Our sample of 382 is close to this threshold and is considered sufficient for descriptive analyses, especially given the study's exploratory aims.

The inclusion criteria were: (1) active undergraduate students enrolled in universities in Malang City during the study period, (2) aged 18-25 years, and (3) willing to participate by providing informed consent. Exclusion criteria included students who did not complete the questionnaire or provided inconsistent responses. This approach was chosen to reach a large and diverse pool of students across universities in Malang City, particularly because no complete sampling frame was available.

To reduce potential self-selection bias, the survey link was distributed across multiple faculties and universities to reach diverse student groups. Respondents were also prevented from submitting duplicate entries through Google Forms' single-response restriction. Nonetheless, voluntary participation may introduce selection bias, a limitation acknowledged.

Data were collected using an online self-administered questionnaire distributed via Google Forms. The instruments consisted of two main sections: (1) sociodemographic characteristics (age, sex, study program, monthly allowance, etc.) and (2) SSB consumption habits, including frequency and types of beverages consumed.

Anthropometric data (body weight and height) were self-reported by participants through the online questionnaire. To minimize reporting bias, respondents were instructed to refer to their most recent measurements obtained from health facilities or home digital scales. The questionnaire also included prompts to remind participants to enter accurate, up-to-date values. Although self-reported measurements may introduce error, previous studies have shown moderate to high validity of self-reported anthropometrics in young adults.

The questionnaire consisted of demographic variables and SSB consumption habits, adapted from previously published instruments. Two public health experts conducted face and content validation to ensure clarity and relevance. A pilot test involving 30 students was conducted to assess questionnaire reliability, yielding acceptable internal consistency (Cronbach's alpha >0.70 for key sections). Feedback from the pilot test was used to refine item wording before completing data collection.

Data entry and cleaning were conducted prior to analysis. Descriptive statistics (frequency distributions, percentages, means, and standard deviations) were used to summarize the data. Bivariate analyses using chi-square tests were performed to examine associations between demographic variables and SSB consumption habits.

This research received ethical clearance through an exemption certificate number 25.10.6/UN32.14.2.8/LT/2024 issued by the Research Ethics Committee of Universitas Negeri Malang, confirming that the study met ethical standards. All procedures adhered to the principles of prudence, confidentiality of participants' information, and voluntary informed consent. The study involved no direct interventions that could pose risks to participants, and all collected data were utilized exclusively for scientific purposes.

RESULTS

Table 1 shows that most participants were 19 years old (40.1%), followed by those aged 20 (35.9%), while the smallest group was 23 years old (0.5%). The sample was predominantly female (80.4%), with males representing only 19.6%. Based on BMI classification, nearly half of the respondents (47.4%) had a normal weight, 22.5% were underweight, and 5.2% were in the obesity class II category. In terms of academic background, two-thirds (66.8%) were enrolled in non-health-related disciplines, while 33.2% were studying in health-related fields.

Table 1. Respondent characteristics

Characteristics	n	%
Age (Year)		
18	28	7,3
19	153	40,1
20	137	35,9
21	53	13,9
22	9	2,4
23	2	0,5
Gender		
Male	75	19,6
Female	307	80,4
BMI		
Underweight	86	22,5
Normal	181	47,4
Overweight	47	12,3
Obesity 1	48	12,6
Obesity 2	20	5,2
Field of Study		
Health	127	33,2
Non-Health	255	66,8

Table 2 shows that 282 of the 382 participants (73.8%) reported favoring sugar-sweetened beverages, highlighting the high prevalence of this preference among students in Malang City.

Table 2. Distribution of SSB consumption preferences among students

Preference for consuming SSB	n	%
Yes	282	73.8
No	100	26.2

The consumption of sweetened beverages in containers (SSB) is an important aspect of understanding college students' habits. This information provides an overview of specific moments when these beverages are more frequently chosen to accompany daily activities. Thus, analysis of consumption times can help explain college students' behavioral tendencies in choosing SSB.

To avoid ambiguity regarding the terms 'morning,' 'afternoon,' 'evening,' and 'night,' the questionnaire provided clear time definitions for respondents. The time categories were defined as follows: morning (00:01–11:00), afternoon (11:00–15:00), evening (15:00–17:00), and night (18:00–24:00). These definitions were included directly in the questionnaire to ensure consistent interpretation across participants.

Table 3 shows that most students prefer to consume sugar-sweetened beverages (SSB) during the day (58.6%), when they are busy and need a refreshing drink. Consumption at night (19.6%) and in the evening (16.2%) is also quite common, though the numbers are much lower than during the day. Meanwhile, only a small number of students are accustomed to consuming SSB in the morning (5.5%), indicating that these beverages are not their primary choice for starting their daily activities.

Table 3. Distribution of SSB consumption times among students

Consumption time	n	%
Morning	21	5.5
Afternoon	224	58.6
Evening	62	16.2
Night	75	19.6

The most preferred type of SSB

Students reported various types of sugar-sweetened beverages (SSB) as part of their daily consumption. Understanding the types of SSB most commonly preferred provides insights into their dietary patterns and potential health risks. Figure 1 summarizes students' preferences, highlighting the most frequently consumed SSB types.

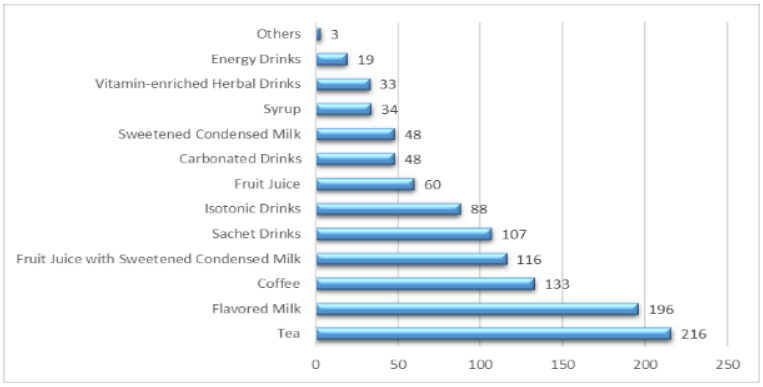

Figure 1. The most commonly consumed types of SSB

Figure 1 shows that students most frequently consume three types of sugar-sweetened beverages. Packaged tea ranks first with 216 respondents, followed by flavored milk with 196 respondents, and packaged coffee with 133 respondents. This indicates that beverages with familiar flavors and easy accessibility are more popular.

Conversely, the three beverage types with the lowest consumption rates are energy drinks (19 respondents), vitamin-enriched herbal beverages (33 respondents), and syrup (34 respondents). The low consumption rates for these beverages may indicate that they are less popular or rarely chosen as the primary option by students.

The main reasons for purchasing SSB

When examining students' consumption patterns, it is also essential to understand the underlying reasons that drive their purchasing decisions. Identifying the primary motivations helps explain not only their preferences but also the factors influencing their daily choices. The following section highlights the primary reasons students reported for buying sugar-sweetened beverages (SSB).

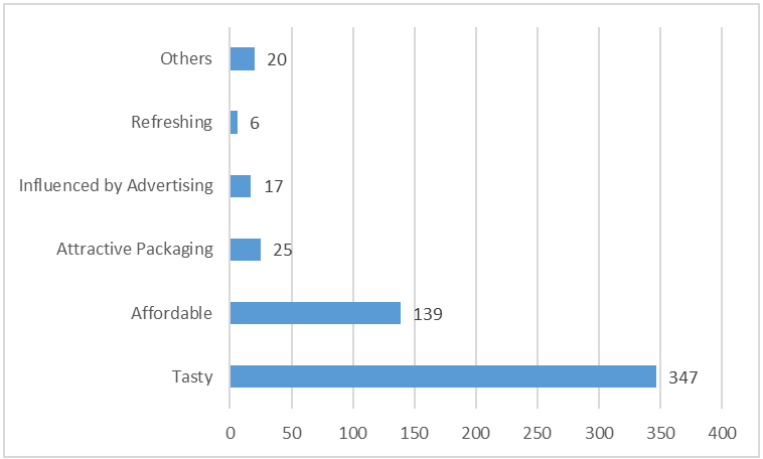

Figure 2. Reasons for SSB consumption choices

Figure 2 shows the main reasons why students purchase sugar-sweetened beverages (SSB). The majority of respondents (347 respondents) cited taste as the primary reason, making it the most influential factor by far. Affordability was the second most common reason (139

respondents), suggesting that price also plays a significant role in students' purchasing decisions. Other factors, such as attractive packaging (25 respondents), advertising influence (17 respondents), and the perception of refreshment (6 respondents), were mentioned but made much smaller contributions. Meanwhile, 20 respondents indicated other unspecified reasons. Overall, these results indicate that sensory enjoyment (deliciousness) and economic considerations (affordability) are the main factors driving the consumption of soft drinks (SSB) among college students.

The most frequently mentioned place of purchase

In exploring students' purchasing habits, it is important to identify where they most often obtain sugar-sweetened beverages (SSB). Understanding the most frequently mentioned places of purchase provides insight into accessibility and consumer preferences. The following section presents the key locations where students typically buy SSB.

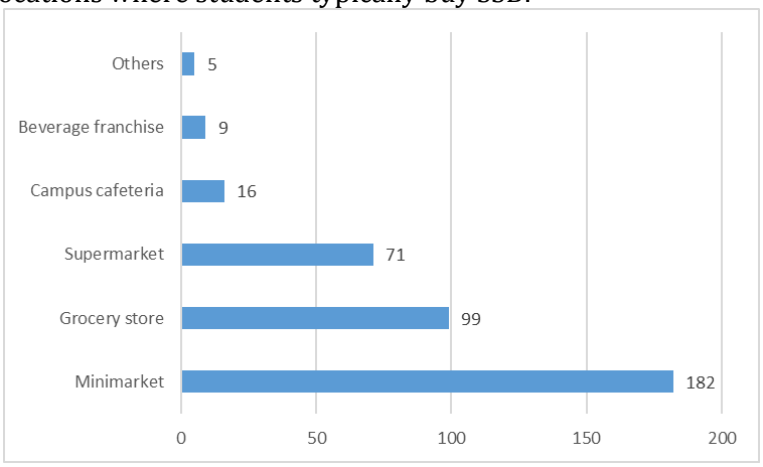

Figure 3. Distribution of SSB purchasing locations

Figure 3 highlights the students who most often purchase sugar-sweetened beverages (SSB) from minimarkets, which were the dominant source, with 182 respondents reporting this choice. Grocery stores were another popular option, with 99 students, while supermarkets were somewhat less common, with 71 respondents. On the other hand, far fewer students reported buying SSB from campus cafeterias (16 respondents) or beverage franchises (9 respondents). These findings suggest that students tend to buy SSB from easily accessible places in their daily lives, particularly minimarkets and small grocery stores, rather than from campus-based or franchise outlets.

DISCUSSION

Influence of demographic characteristics on SSB consumption

Most participants were 19 years old (40.1%), indicating that consumption of sweetened beverages, including SSB (sugar-sweetened beverages), tends to be higher among younger age groups, particularly adolescents and young adults. This finding is consistent with studies across countries showing that the younger a person is, the greater the tendency to consume SSB, and that consumption decreases with age (Fontes et al., 2020; Zafar et al., 2025).

In terms of gender, the majority of the sample were female (80.4%). Given that nearly 80% of respondents were female, gender-related findings should be interpreted cautiously, as the observed patterns may reflect sample imbalance rather than actual differences in beverage consumption behaviors. Although men generally consume SSB in larger quantities, women tend to consume SSB more frequently, albeit in smaller portions, a pattern also observed among children and adolescents (Al-Hanawi et al., 2022; Zafar et al., 2025).

Interestingly, nearly half of the respondents (47.4%) had a normal body weight, highlighting that high SSB consumption does not necessarily correspond to elevated BMI in cross-sectional studies. Previous research among student populations similarly shows that a substantial proportion of individuals maintain a normal body weight despite frequent SSB intake, suggesting that other lifestyle factors or genetic predispositions may mediate this relationship (Berger et al., 2020; Zafar et al., 2025).

Additionally, the majority of participants (66.8%) were enrolled in non-health-related programs of study. Students from non-health-related fields tend to consume SSB more frequently than those from health-related disciplines, possibly due to lower health awareness or different social norms (Daly, 2022; Zafar et al., 2025). Taken together, these findings underscore the multifactorial nature of SSB consumption, which appears to be influenced by age, gender, educational background, and possibly other behavioral and environmental factors.

Underlying preferences and patterns in SSB intake among students

A substantial proportion of students, up to 73.8% of the sample, reported a preference for sugar-sweetened beverages (SSB), underscoring the widespread appeal of these drinks within university populations. This high prevalence suggests that factors beyond physiological thirst or energy requirements influence consumption. Enjoyment of sweet flavors emerges as a primary motivator, reflecting individual taste preferences. At the same time, social contexts play a crucial role, as SSB are frequently consumed during gatherings, study sessions, or recreational activities with peers. Popular trends such as bubble tea and flavored sweetened teas further reinforce consumption, as these beverages are closely associated with socializing and contemporary lifestyle patterns (Bakar et al., 2020; Zafar et al., 2025).

Additionally, habitual behaviors and media exposure, such as watching movies or using smartphones, appear to reinforce SSB preference, indicating that consumption is embedded within daily routines and social interactions. Conversely, students with higher health awareness or a tendency to choose unsweetened alternatives generally consume fewer SSB, highlighting the moderating influence of psychosocial and cognitive factors (Ren et al., 2025; Ulfah et al., 2022; Xiao et al., 2023).

Collectively, these findings suggest that students' SSB preferences reflect an interplay of taste, social habits, and lifestyle trends, indicating that consumption is driven not only by physiological needs but also by complex psychosocial determinants.

Temporal trends and lifestyle factors related to consumption

The timing of SSB consumption among students reveals clear temporal patterns closely linked to their daily routines and lifestyles. Most students reported preferring to consume SSB during the day (58.6%), a period typically associated with academic activities and the need for a refreshing beverage to cope with busyness and fatigue. Evening (16.2%) and nighttime (19.6%) consumption were also reported, though to a lesser extent, reflecting the role of SSB as companions during leisure or social gatherings after classes. In contrast, only a small proportion of students (5.5%) consumed SSB in the morning, suggesting that these beverages are not commonly perceived as essential to starting the day, unlike coffee or tea.

This temporal distribution illustrates how SSB consumption is embedded within students' lifestyle patterns. Daytime intake often serves as a means of refreshment, whereas evening and nighttime consumption is more strongly associated with relaxation, entertainment, or social interaction. Consistent with previous findings, SSB are frequently consumed after lectures, during breaks, or while engaging in screen-related leisure activities, reinforcing their role as both a functional and social beverage. These patterns highlight that SSB consumption among students is not merely driven by thirst or energy needs, but is also shaped by lifestyle dynamics, social habits, and broader trends in youth culture.

Market-driven choices: popular types of beverages

The types of sugar-sweetened beverages most frequently consumed by students reflect broader market trends in the Indonesian beverage industry. Among the respondents, packaged tea emerged as the most popular choice (n=216), followed by flavored milk (n=196) and packaged coffee (n=133). The dominance of these beverages highlights how student preferences are closely aligned with products that are widely available, affordable, and aggressively marketed. In particular, the popularity of packaged tea and flavored milk reflects their positioning as convenient and refreshing options that cater to youthful taste preferences, while packaged coffee resonates with the increasing demand for energy and alertness among students with busy academic schedules (Abouelfettoh et al., 2024; Alfawaz et al., 2020; Jothi et al., 2021).

Beyond intrinsic taste and convenience, the popularity of these beverages is powerfully shaped by market-driven factors, including brand promotion, advertising campaigns, and social media exposure. Marketing strategies often frame these drinks as lifestyle symbols, associating them with modernity, sociability, and aspirational identities. This suggests that students' beverage choices are not solely determined by individual preference, but also by the influence of commercial trends and cultural narratives created by the beverage industry (Darmawan et al., 2025; Farmer et al., 2025; Grossman et al., 2022). Consequently, the high consumption of certain types of SSB among university students reflects an intersection between personal taste, lifestyle demands, and targeted market dynamics.

Determinants of purchase decisions for SSB

The decision to purchase sugar-sweetened beverages (SSB) among students is largely shaped by a combination of sensory preferences, economic considerations, and environmental factors (Kininmonth, 2022). Taste emerged as the most influential determinant, with the majority of respondents (n=347) citing it as the primary reason for choosing SSB. This highlights the strong role of flavor appeal in shaping consumer behavior, as sweet taste remains highly attractive to young consumers (Dondzilo & Kemps, 2024; Haynes-Maslow et al., 2022).

Affordability ranked second (n=139), suggesting that low price points make SSB an accessible option for students, who often have limited financial resources. Availability and convenience also play a crucial role, as SSB are widely distributed through vending machines, campus stores, and retail outlets, making them easy to obtain in daily routines. Studies across various countries demonstrate that when SSB prices increase (e.g., through taxation), consumption drops significantly, indicating that demand is highly price-sensitive. For example, a 10% price increase can reduce SSB consumption by 11–13% or more, with even greater reductions observed among low-income or student populations (Andreyeva et al., 2022; Huque et al., 2024; Shen et al., 2023).

These findings suggest that student purchase decisions are not solely based on physiological needs but are influenced by the interplay among hedonic taste preferences, budgetary constraints, and the pervasive accessibility of SSB. The dominance of taste as a motivator underscores the challenge of reducing SSB consumption, since it appeals directly to sensory gratification, while affordability and easy access further reinforce habitual purchasing. Collectively, these determinants reflect the economic and environmental drivers that sustain high levels of SSB consumption among university students.

Environmental contexts shaping access and availability

The environmental context plays a critical role in shaping students' access to and consumption of sugar-sweetened beverages (SSB). Most students reported purchasing SSB from nearby minimarkets, which serve as highly accessible, convenient points of sale within or around campus (Dastgerdizad, 2022). Grocery stores were also frequently used, while supermarkets were a less common source, likely due to their greater distance or the larger-scale purchases typically associated with them. The ubiquity of minimarkets in urban settings, combined with their extended operating hours and strategic proximity to student residences or campuses, significantly

increases the likelihood of impulse purchases (Hernandez-Martinez et al., 2022; Zhuang et al., 2021).

Such high accessibility contributes to the normalization of routine SSB consumption, as students are continually exposed to these beverages in their immediate environment. Promotional displays, ready-to-drink packaging, and product placement at checkout counters further reinforce purchasing behavior. This indicates that availability is not merely a passive condition but an active driver of consumption patterns, as the ease of obtaining SSB lowers the threshold for habitual intake (Hebden et al., 2013; Mâsse et al., 2014). Ultimately, the purchasing environment highlights how structural and commercial factors shape student behavior, underscoring the importance of considering access and availability in strategies to reduce SSB consumption.

Health implications and strategies for reducing SSB intake

The high prevalence of sugar-sweetened beverage (SSB) consumption among university students poses serious concerns for long-term health outcomes. Frequent intake of SSB has been consistently associated with increased risks of obesity, type 2 diabetes, cardiovascular disease, and other metabolic disorders (Calcaterra et al., 2023). Since dietary behaviors established during adolescence and young adulthood often persist into later life, excessive SSB intake in this population could significantly contribute to the rising burden of non-communicable diseases (Ge et al., 2025; Ooi et al., 2022). This underscores the urgency of addressing students' SSB consumption patterns as a critical public health priority.

To mitigate these risks, both educational and environmental interventions are needed. Nutrition education programs that emphasize the health consequences of high sugar intake can help students make more informed dietary choices (Morales-Ruán et al., 2025; Tallon et al., 2021). Additionally, supportive campus environments play a vital role in shaping behavior. Universities can adopt strategies such as limiting the sale of SSB on campus, increasing the availability of affordable, healthier alternatives, and promoting water as the default beverage choice in cafeterias and vending machines. By aligning individual awareness with environmental supports, these interventions can foster sustainable behavior change among students (Antwi et al., 2024; Franchini et al., 2023; Greenthal et al., 2025).

At the policy level, broader structural measures are equally essential. Indonesia has recently explored implementing excise taxes on sugar-sweetened beverages, drawing on evidence from other countries where such fiscal policies have effectively reduced consumption by raising retail prices and discouraging routine purchases (Siregar et al., 2024). When combined with targeted health promotion campaigns and campus-based initiatives, taxation policies can create a comprehensive framework to curb SSB consumption. This multi-level approach, such as linking individual education, supportive environments, and national fiscal regulation, can offer a more robust pathway toward reducing SSB intake and mitigating its long-term health implications among young populations.

Research limitations and future research recommendations

This study has several limitations. First, a cross-sectional design does not allow causal conclusions about the relationship between demographic factors and SSB consumption. Second, voluntary sampling techniques may introduce selection bias because respondents who participate are likely to be those with greater interest or concern in the research topic. This limits the generalizability of the results to the entire student population in Malang.

Third, the sample's gender distribution was highly imbalanced, with approximately 80% of respondents female. Therefore, any observed differences in SSB consumption between males and females should be interpreted cautiously, as they may reflect sample composition rather than actual behavioral variation.

Fourth, although the questionnaire clearly defined the consumption time categories (morning, afternoon, evening, and night), the reliance on self-administered online reporting introduces the potential for recall bias and social desirability bias in reporting consumption frequency and beverage choices. Fifth, anthropometric measurements (body weight and height)

were self-reported, which may lead to measurement errors despite instructions encouraging participants to use their most recent measurements. Nevertheless, these findings provide important insights into trends in SSB consumption among students and serve as a foundation for further research with stronger sampling designs and instruments.

Future studies should employ more representative sampling techniques, such as probability-based sampling, to improve generalizability and longitudinal designs to examine changes in SSB consumption over time. Mixed methods approach, including qualitative interviews or focus group discussions, may also help uncover the underlying motivations and contextual factors influencing beverage choices. Expanding research to other regions or different age groups would further enhance understanding of sweetened beverage consumption behaviors in Indonesia.

CONCLUSION

SSB consumption is relatively high among university students, with a clear preference for affordable, easily accessible beverages. These findings highlight the need for targeted health education interventions to increase students' awareness of the potential health risks associated with excessive SSB intake. As a practical recommendation, universities and public health stakeholders could collaborate to design campus-based health promotion programs, such as nutrition education campaigns, healthy beverage policies in campus cafeterias, and the provision of healthier drink alternatives. Such efforts may reduce SSB consumption and encourage healthier lifestyle choices among young adults.

AUTHOR'S DECLARATION

Authors' contributions and responsibilities

ITR: Conceptualization (lead), formal analysis (lead), writing original draft (lead), writing – review & editing (lead); **NHU**: Methodology development (lead), validation (equal), literature review (lead), result interpretation (equal), writing – original draft (supporting); **AR**: Data collection (lead), data entry (lead), validation (supporting); **BND**: Data collection (equal), data entry (equal), validation (supporting); **YR**: Data collection (equal), data entry (equal), validation (supporting); all authors reviewed and approved the final manuscript.

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Availability of data and materials

All data are available from the authors.

Competing interests

The authors declare no competing interests.

Additional information

Write additional information related to this research, if any.

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